

What is Claimed is:

1. A nitride based semiconductor laser device comprising:

5 a transparent substrate having conductive properties; a nitride based semiconductor layer formed on one surface of said transparent substrate and constituting a cavity;

10 a first ohmic electrode of a first conduction type formed on the other surface of said transparent substrate; and

a second ohmic electrode of a second conduction type formed on said nitride based semiconductor layer,

15 at least one of said first and second ohmic electrodes being formed in such a shape or arrangement that the forward and backward directions along the cavity length of said nitride based semiconductor layer can be distinguished.

2. The nitride based semiconductor laser device

20 according to claim 1, wherein

said first ohmic electrode and said second ohmic electrode have different shapes.

3. The nitride based semiconductor laser device

25 according to claim 1, wherein

said first ohmic electrode and said second ohmic electrode have the same shape.

4. The nitride based semiconductor laser device
5 according to claim 1, wherein

said second ohmic electrode is arranged on a region different from a region above a region where said first ohmic electrode is formed in said nitride based semiconductor layer.

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5. The nitride based semiconductor laser device according to claim 1, wherein

said transparent substrate is composed of gallium nitride or silicon carbide.

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6. The nitride based semiconductor laser device according to claim 1, wherein

said nitride based semiconductor layer contains at least one of gallium, aluminum, indium, boron, and thallium.

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7. The nitride based semiconductor laser device according to claim 1, wherein

at least one of said first and second ohmic electrodes is asymmetric with respect to a line passing through a center 25 point of said cavity length and vertical to the cavity length

direction.

8. The nitride based semiconductor laser device according to claim 1, wherein

5 said nitride based semiconductor layer has a striped current injection region, and

said first and second ohmic electrodes respectively have regions opposite to said striped current injection region.

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9. The nitride based semiconductor laser device according to claim 1, further comprising

dielectric films respectively formed at a front facet and a rear facet of said cavity.

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10. The nitride based semiconductor laser device according to claim 9, wherein

said dielectric films respectively formed at the front facet and the rear facet of said cavity have different
20 reflectances.

11. The nitride based semiconductor laser device according to claim 1, wherein

said nitride based semiconductor layer comprises a
25 cladding layer of a first conduction type, an active layer,

and a cladding layer of a second conduction type.

12. A method of fabricating a nitride based semiconductor laser device, comprising the steps of:

5 forming a nitride based semiconductor layer on a transparent substrate having conductive properties;

forming a first ohmic electrode of a first conduction type on a predetermined region on the other surface of said transparent substrate, and forming a second ohmic electrode 10 of a second conduction type on said nitride based semiconductor layer; and

dividing said transparent substrate, together with said nitride based semiconductor layer, to form a front facet and a rear facet to form a cavity,

15 the step of forming the first and second ohmic electrodes comprising the step of forming at least one of the first and second ohmic electrodes in such a shape or arrangement that the forward and backward directions along the cavity length can be distinguished.

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13. The method according to claim 12, further comprising

respectively forming dielectric films at said front facet and said rear facet.

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14. The method according to claim 12, wherein
the step of forming said first and second ohmic
electrodes comprises the step of forming the first ohmic
electrode and the second ohmic electrode in different shapes.

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15. The method according to claim 12, wherein
the step of forming said first and second ohmic
electrodes comprises the step of forming the first ohmic
electrode and the second ohmic electrode in the same shape.

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16. The method according to claim 12, wherein
the step of forming said first and second ohmic
electrodes comprises the step of arranging said second ohmic
electrode on a region different from a region above a region
15 where said first ohmic electrode is formed in said nitride
based semiconductor layer.

17. The method according to claim 12, wherein
said transparent substrate is composed of gallium
20 nitride or silicon carbide.

18. The method according to claim 12, wherein
said nitride based semiconductor layer contains at
least one of gallium, aluminum, indium, boron, and thallium.

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19. The method according to claim 12, wherein
the step of forming said first and second ohmic
electrodes comprises the step of arranging at least one of
the first and second ohmic electrodes so as to be asymmetric
5 with respect to a line passing through a center point of said
cavity length and vertical to the cavity length direction.

20. The method according to claim 12, wherein
said nitride based semiconductor layer has a striped
10 current injection region, and
said first and second ohmic electrodes respectively
have regions opposite to said striped current injection
region.

15 21. The method according to claim 13, wherein
said dielectric films respectively formed at the front
facet and the rear facet of said cavity have different
reflectances.